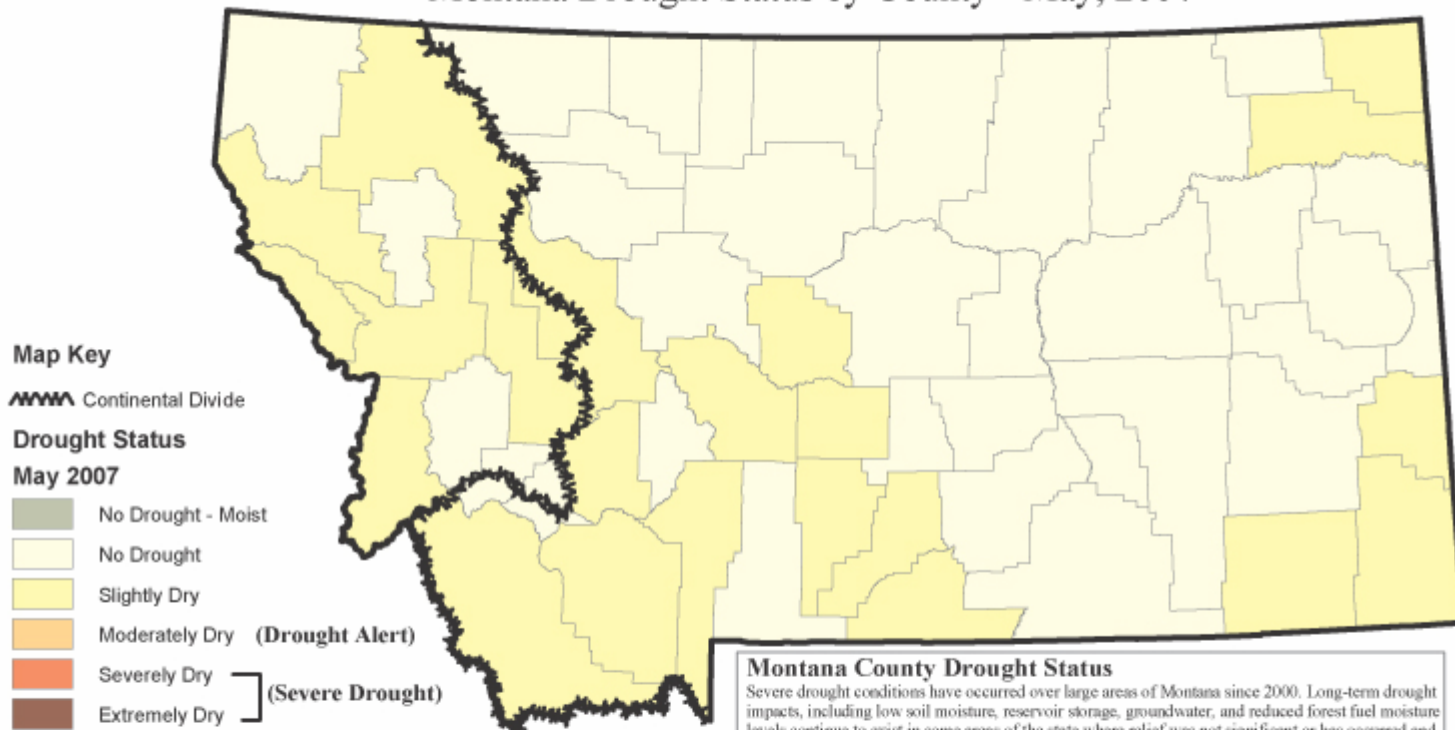


Montana Drought Status - May

Montana Drought Status by County - May, 2007



Drought Impact Types - A = Agricultural - Soil Moisture, Range conditions

H = Hydrological - Water Supplies, Streamflow, Groundwater

Drought Alert - Governor's Drought Advisory Committee strongly encourages local officials to convene local drought committees.

Severe Drought - Local officials should have local drought planning efforts underway or should reconvene the local drought committee at the earliest opportunity.

For recommended responses, see the Montana Drought Plan.



<http://nr.is.mt.gov/drought/>



<http://drought.mt.gov/>

Montana County Drought Status

Severe drought conditions have occurred over large areas of Montana since 2000. Long-term drought impacts, including low soil moisture, reservoir storage, groundwater, and reduced forest fuel moisture levels continue to exist in some areas of the state where relief was not significant or has occurred and has since been lost again.

The Governor's Drought Advisory Committee determines a monthly drought status for each county year round. The drought status map is used to alert decision makers and local officials to the likelihood of drought conditions so timely responses and measures can be taken appropriately.

Drought Alert: After May 15 and at the Moderately Dry Status Level, the Governor's Drought Advisory Committee strongly encourages local officials to address the prospect of drought and consider convening a local drought committee.

Severe Drought: After May 15 and at the Severely Dry Drought Status level, local officials should have local drought planning efforts underway and if not, should convene their local committee at the earliest opportunity.

For information about how the drought status maps are determined or to learn more about recommended responses to drought see the Montana Drought Response Plan.
(<http://nr.is.state.mt.us/drought/committee/DroughtP07.pdf>)

Montana Drought Status - June

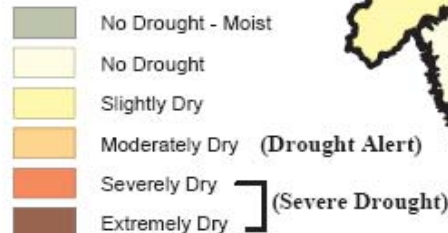
Montana Drought Status by County - June, 2007

Map Key

 Continental Divide

Drought Status

June 2007



Drought Impact Types - **A** = Agricultural - Soil Moisture, Range conditions

H = Hydrological - Water Supplies, Streamflow, Groundwater

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Montana County Drought Status

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Governor's Drought Advisory Committee Meeting

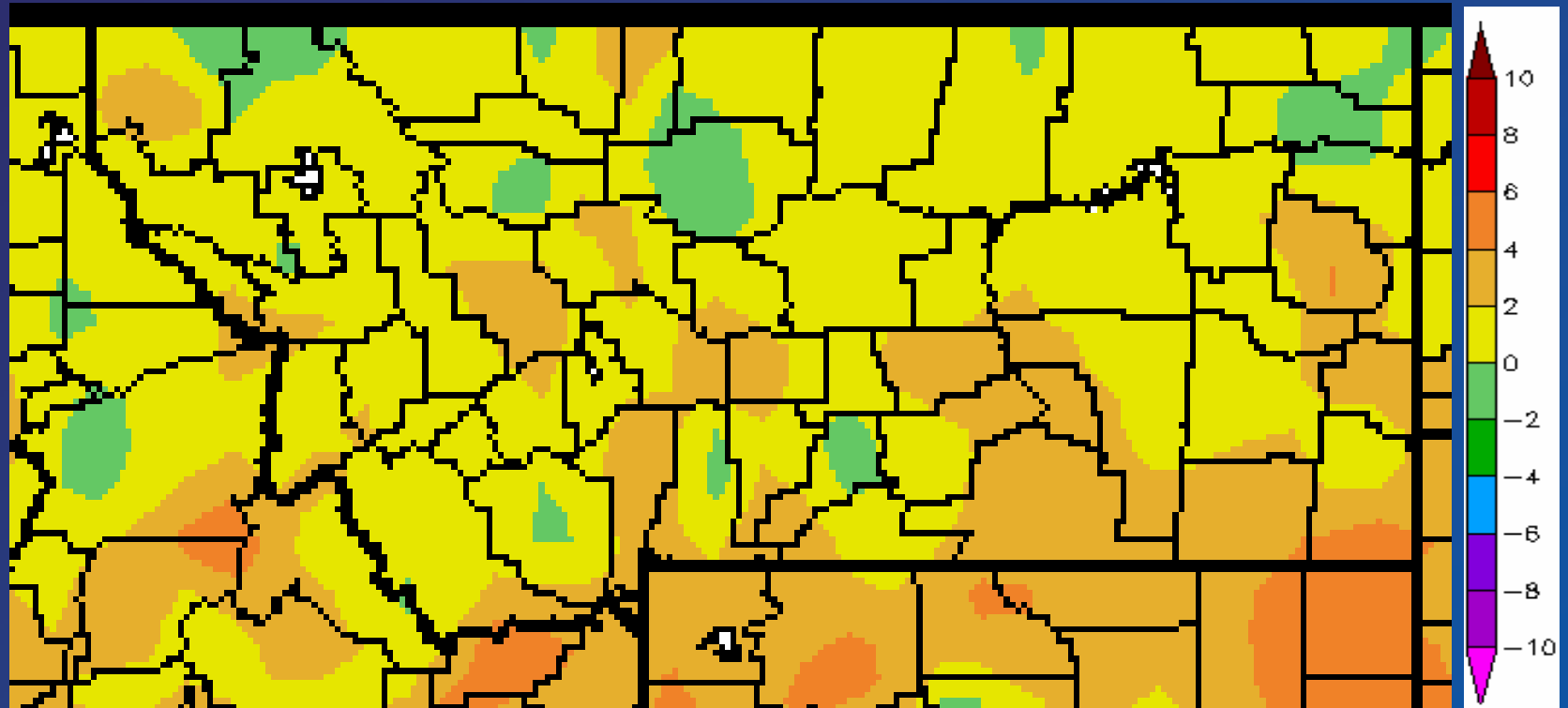
June 14, 2007

National Weather Service

Gina Loss

Temperature Anomalies

May 2007

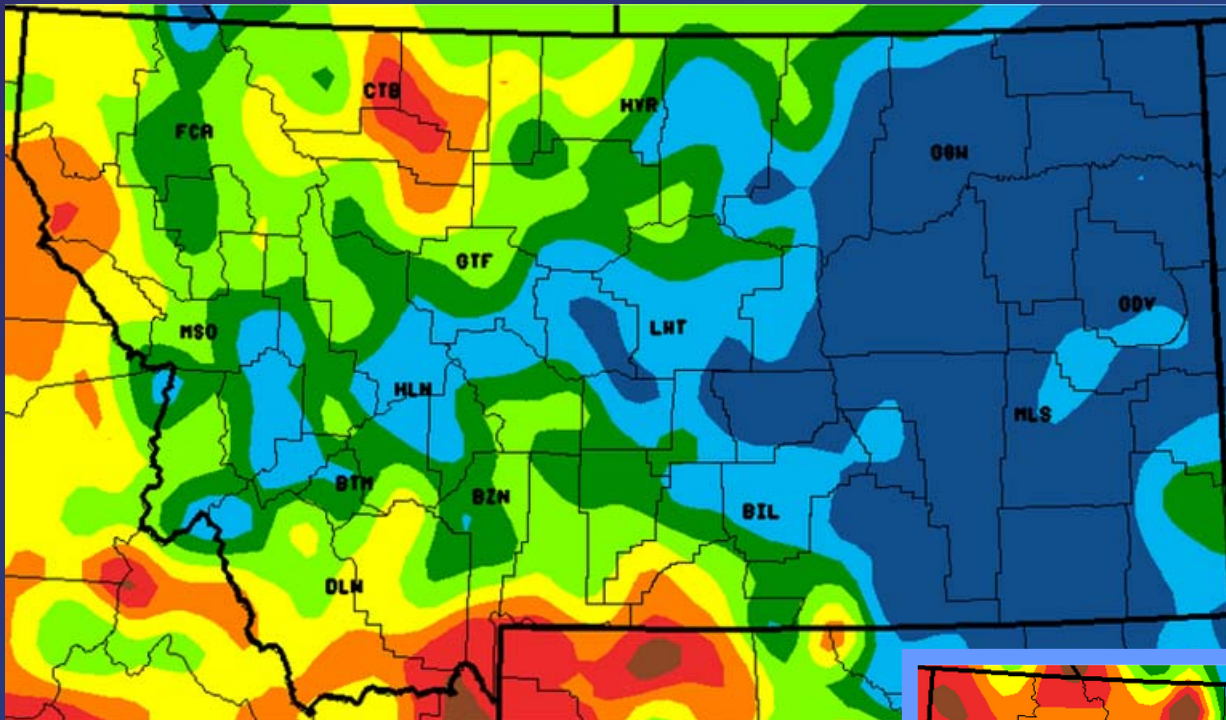


- 💧 **Temperatures averaged near to slightly above normal**

Percent of Normal Precipitation

May 2007

- Large portion of state above normal
 - Much of eastern third better than 200% of normal*
- Smaller areas below to well below normal
 - Northwest*
 - North central*
 - Southwest*

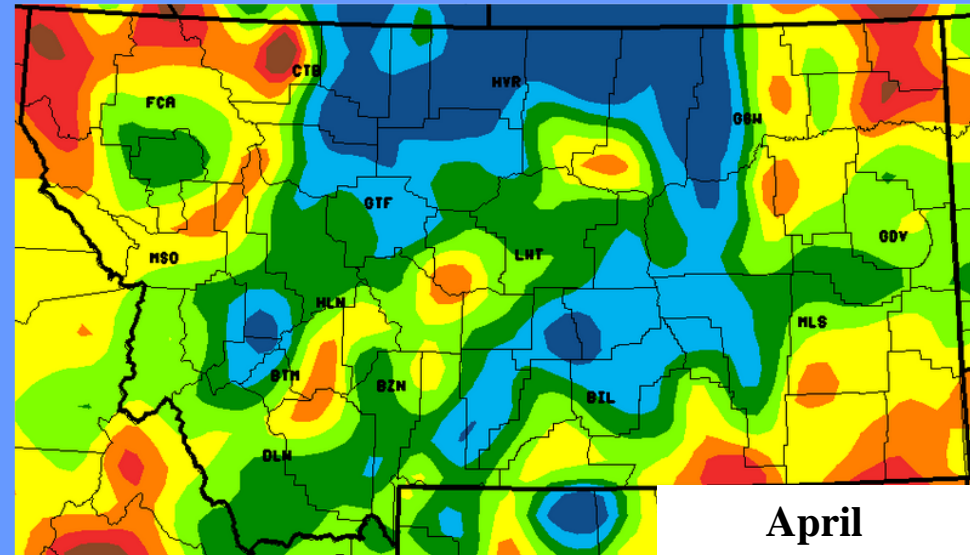


May 2007 Percent of Normal Precipitation
Period of Normal: 1971-2000

20 40 60 85 115 150 200

NOTE: Data used to generate this image are
PROVISIONAL AND SUBJECT TO CHANGE.

htt

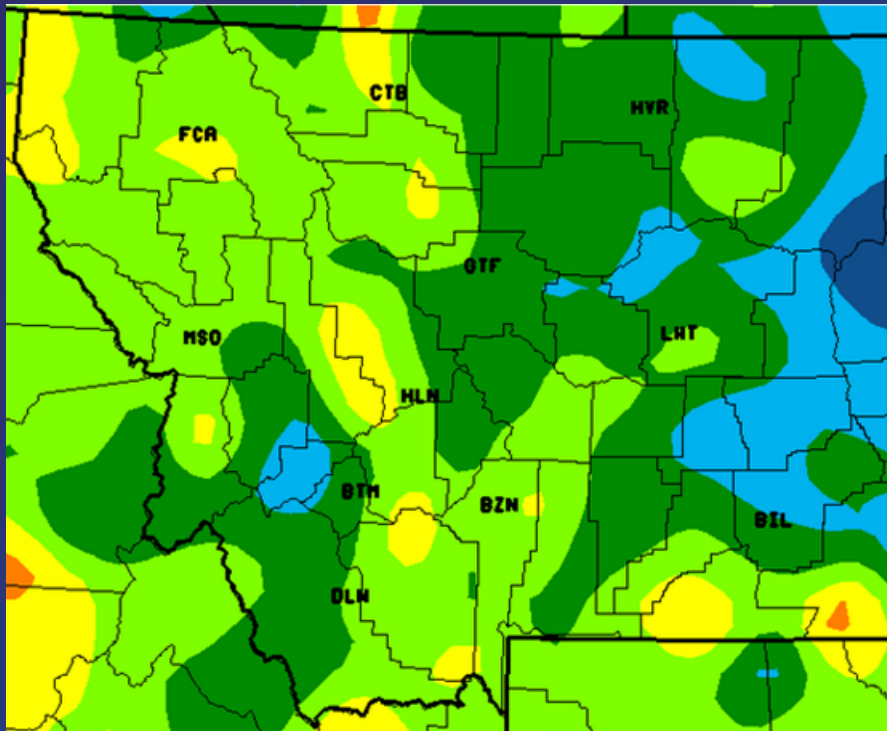


April

Percent of Normal Precipitation

Water Year 2007

- October 2006 – May 2007
- Virtually all of state near to above normal
 - *Significant gains in east*

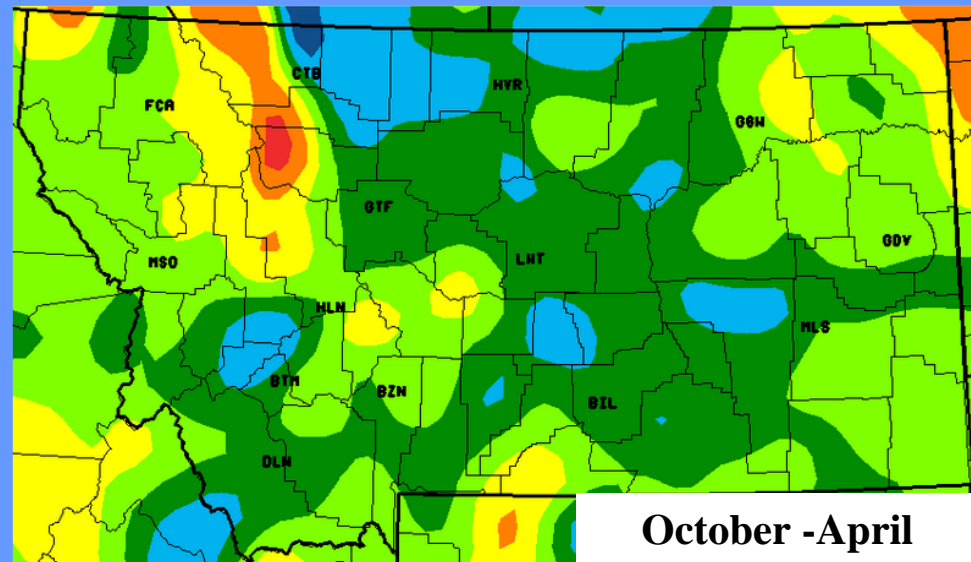


Oct 2006-May 2007 Percent of Normal Preci

Period of Normal: 1971-2000

20 40 60 85 115 150 200

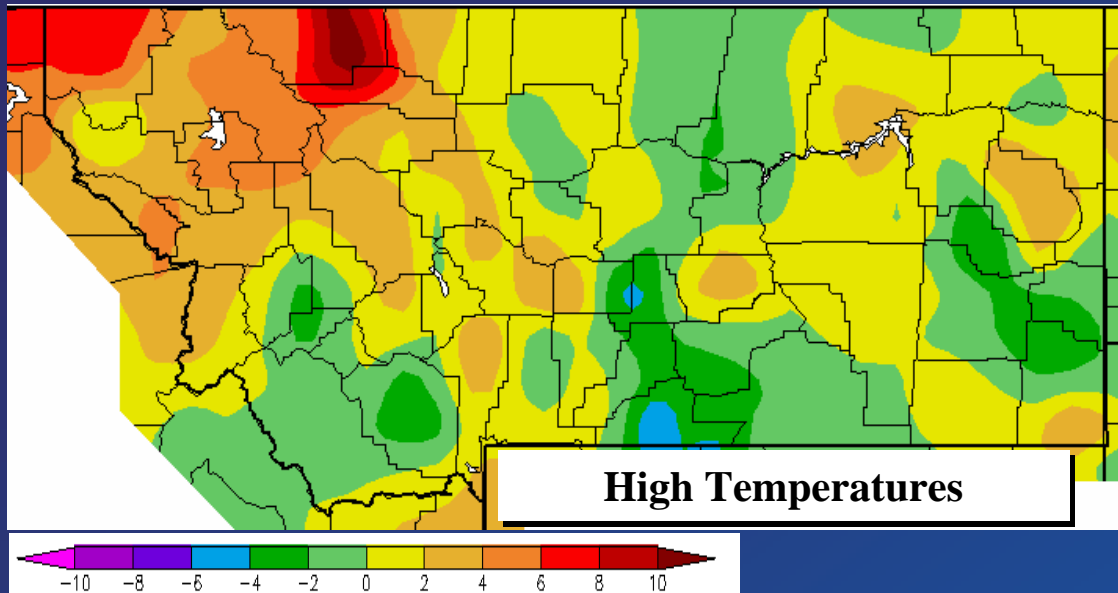
NOTE: Data used to generate this image are
PROVISIONAL AND SUBJECT TO CHANGE.



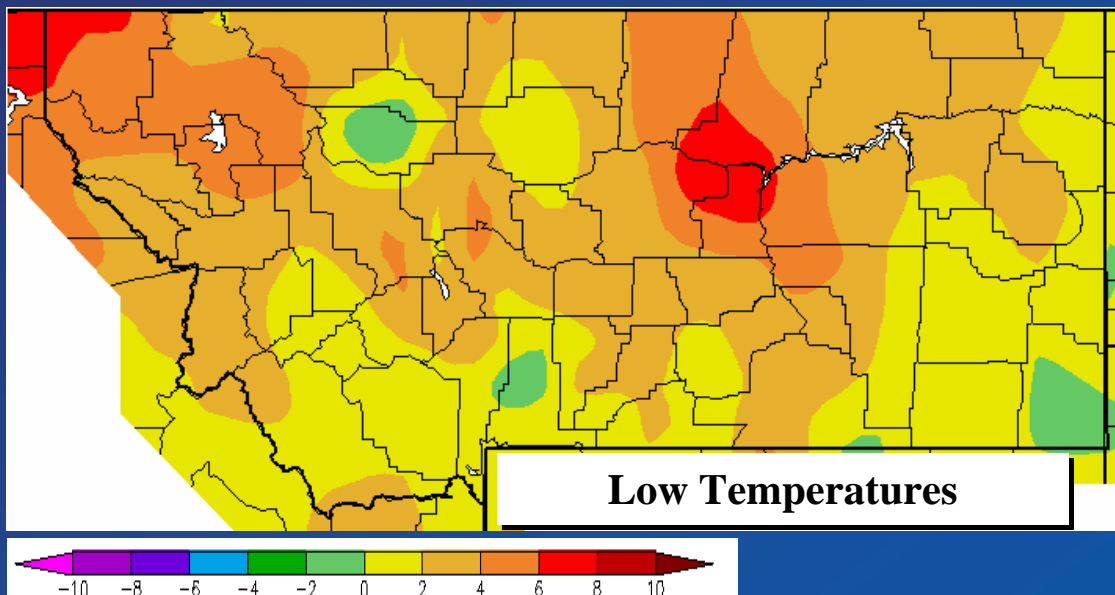
October -April

Departure from Average Temperature

June 1 – June 11, 2007



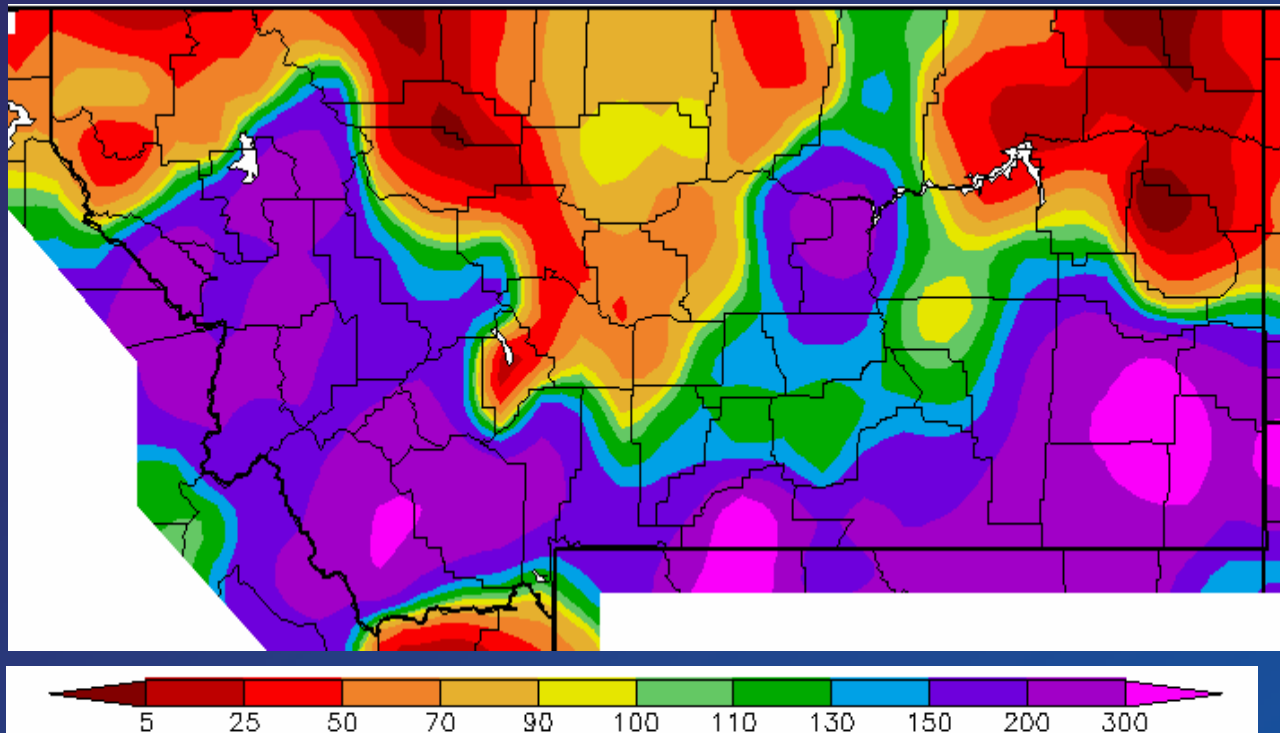
- Highs above normal northwest... cooler south... central and east.
 - Northwest 2 to 8 degree above normal
 - Rocky Mountain Front 4 to 12 degree above normal



- Lows above normal north and central... near normal south
 - Northwest and north central 4 to 8 degrees above normal

Percent of Average Precipitation

June 1 – June 11, 2007



- West... southwest... south central and southeast
 - *Large areas better than 200% of normal*
- Northwest... north central and northeast below to well below normal
 - *Portions of northeast and Rocky Mountain Front 5% to 25% of normal*

Precipitation Totals

June and Water Year 2007

	JUNE 1 - 12				WATER YEAR TO DATE			
	ACTUAL PCPN	NRML PCPN	+/- NRML	% OF NRML	ACTUAL PCPN	NRML PCPN	+/- NRML	% OF NRML
WESTERN MONTANA								
BUTTE	1.18	1.02	0.16	116	5.11	4.77	0.34	107
KALISPELL	0.89	1.22	-0.33	73	6.84	9.01	-2.17	76
MISSOULA	0.81	0.94	-0.13	86	6.72	5.57	1.15	121
MULLAN PASS	1.58	2.61	-1.03	61	38.63	34.91	3.72	111
SOUTHWEST MONTANA								
BIG SKY	2.43	1.11	1.32	219	11.31	9.92	1.39	114
BOULDER	0.45	0.76	-0.31	59	3.57	3.58	-0.01	100
BELGRADE FIELD	1.87	1.40	0.47	134	6.70	6.05	0.65	111
BOZEMAN MSU	2.94	2.06	0.88	143	13.38	8.50	4.88	157
DILLON AIRPORT	1.14	0.95	0.19	120	4.61	3.17	1.44	145
DIVIDE	1.03	0.00	1.03	0	3.71	0.00	3.71	0
ENNIS	1.37	1.30	0.07	105	6.77	5.19	1.58	130
HELENA	0.82	0.91	-0.09	90	3.93	4.02	-0.09	98
ROGERS PASS 9 NNE	2.21	1.57	0.64	141	6.88	6.75	0.13	102
TOWNSEND	0.83	0.71	0.12	117	3.72	3.23	0.49	115
W YELLOWSTONE	0.34	1.51	-1.17	23	6.85	12.67	-5.82	54
WISDOM	0.88	0.98	-0.10	90	5.26	5.03	0.23	105
WISDOM	1.31	0.72	0.59	182	9.93	7.45	2.48	133

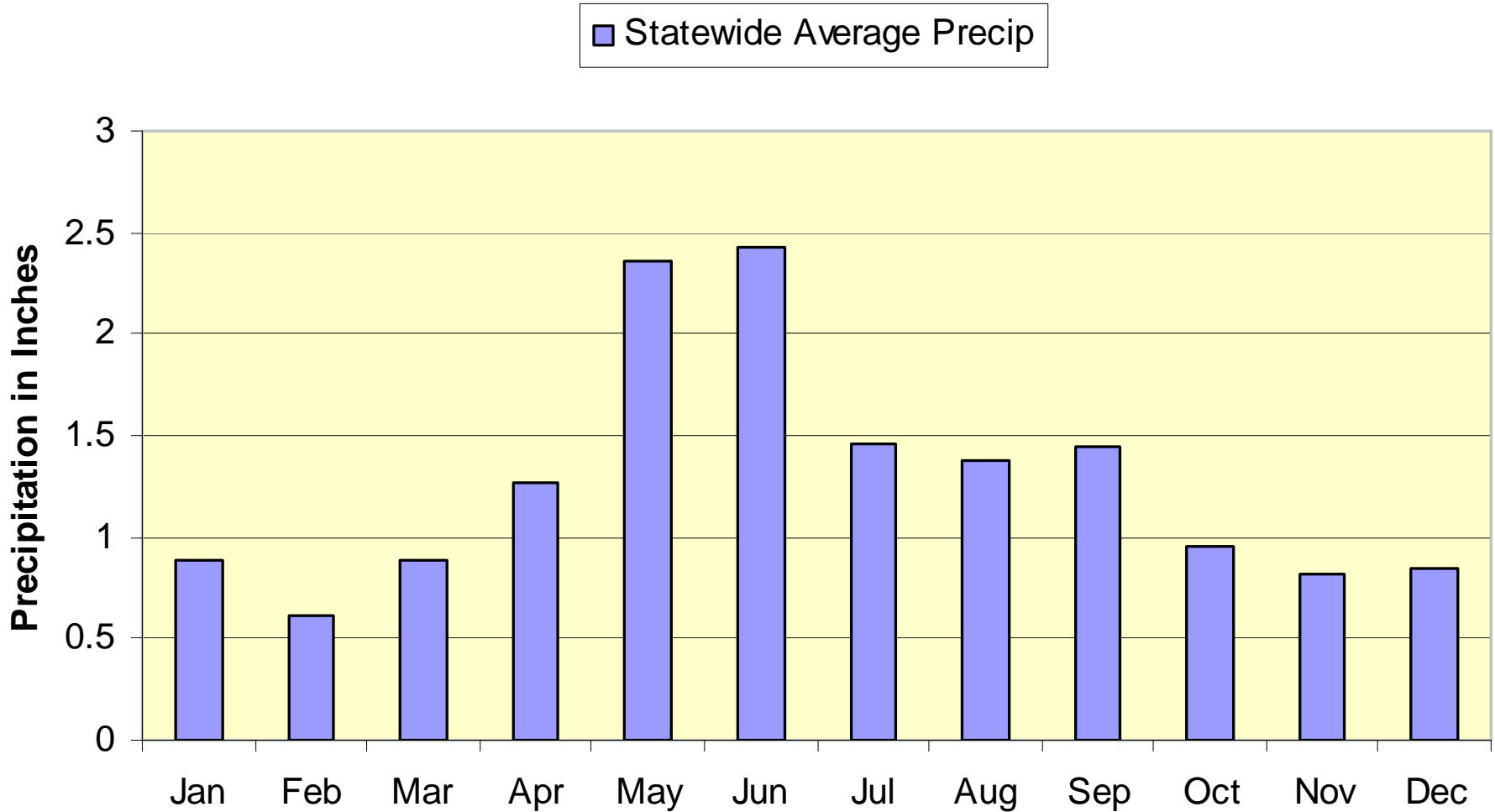
Precipitation Totals

June and Water Year 2007

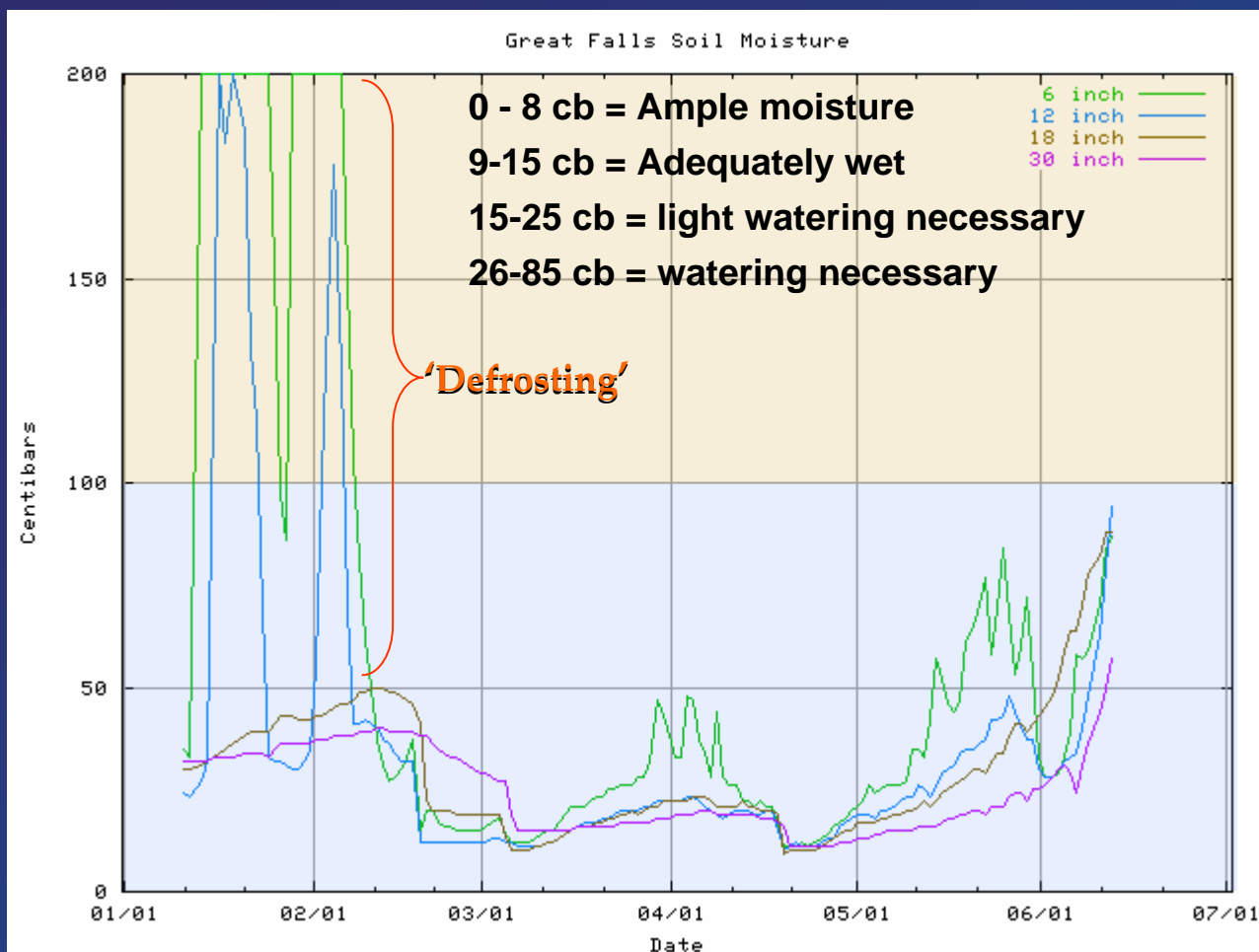
	JUNE 1 - 12				WATER YEAR TO DATE			
	ACTUAL PCPN	NRML PCPN	+/- NRML	% OF NRML	ACTUAL PCPN	NRML PCPN	+/- NRML	% OF NRML
CENTRAL MONTANA								
BILLINGS	0.98	0.85	0.13	115	12.97	10.21	2.76	127
CASCADE 20 SSE	1.40	1.08	0.32	130	11.46	8.50	2.96	135
CHOTEAU	0.22	0.96	-0.74	23	5.03	5.74	-0.71	88
CONRAD	0.00	0.96	-0.96	0	3.74	7.11	-3.37	53
CUT BANK	0.06	1.08	-1.02	6	1.18	6.64	-5.46	18
FORT ASSINNIBOINE	0.69	0.96	-0.27	72	7.99	7.36	0.63	109
FORT BENTON	0.86	1.08	-0.22	80	9.29	8.24	1.05	113
GOLD BUTTE 7 N	0.58	1.12	-0.54	52	9.19	7.51	1.68	122
GRASS RANGE	1.75	1.22	0.53	143	16.02	10.00	6.02	160
GREAT FALLS	0.23	0.99	-0.76	23	9.93	9.35	0.58	106
HAVRE	0.65	0.82	-0.17	79	8.58	6.64	1.94	129
LIVINGSTON	1.23	1.09	0.14	113	13.14	9.97	3.17	132
LEWISTOWN	1.01	1.25	-0.24	81	12.80	10.80	2.00	119
MARTINSDALE 3 NNW	0.52	0.96	-0.44	54	7.27	7.67	-0.40	95
NEIHART 8 NNW	2.12	1.44	0.68	147	19.31	13.14	6.17	147
STANFORD	0.71	1.20	-0.49	59	12.70	10.02	2.68	127
VALIER	0.24	1.14	-0.90	21	4.89	6.69	-1.80	73
WHITE SULPHUR SPRGS	0.69	0.96	-0.27	72	6.63	8.02	-1.39	83
EASTERN MONTANA								
GLASGOW	0.14	0.87	-0.73	16	10.02	5.91	4.11	170
MILES CITY	2.20	1.01	1.19	218	10.86	8.09	2.77	134
WILLISTON	0.47	0.92	-0.45	51	8.40	7.61	0.79	110

Statewide Average Precipitation

June wettest month on average



Great Falls Soil Moisture



💧 **Recent warm...
windy days
have caused
rapid drying**

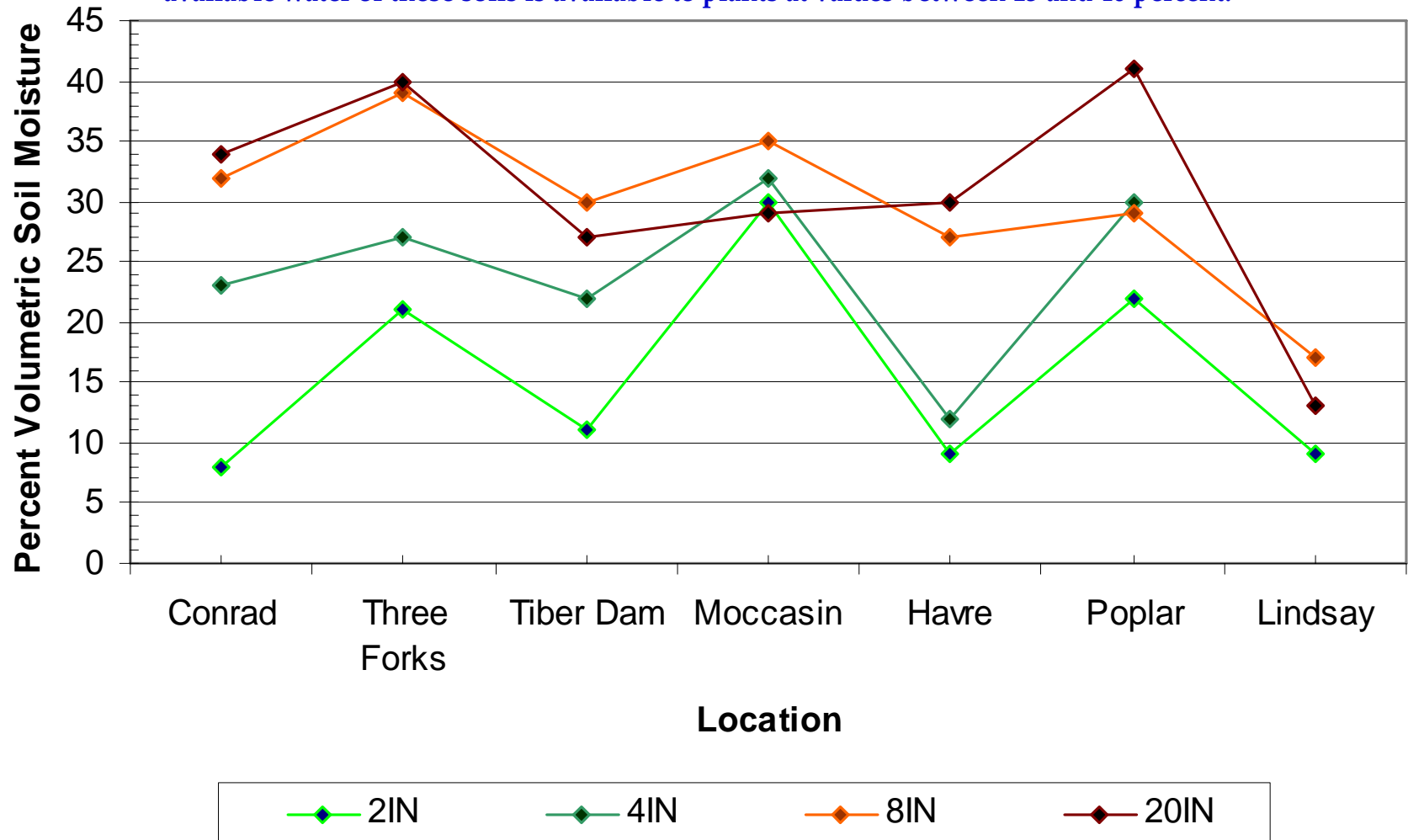
– **6... 12 and 18
inch levels all
above 85cb**

- **Drier than
level where
'watering
necessary'**

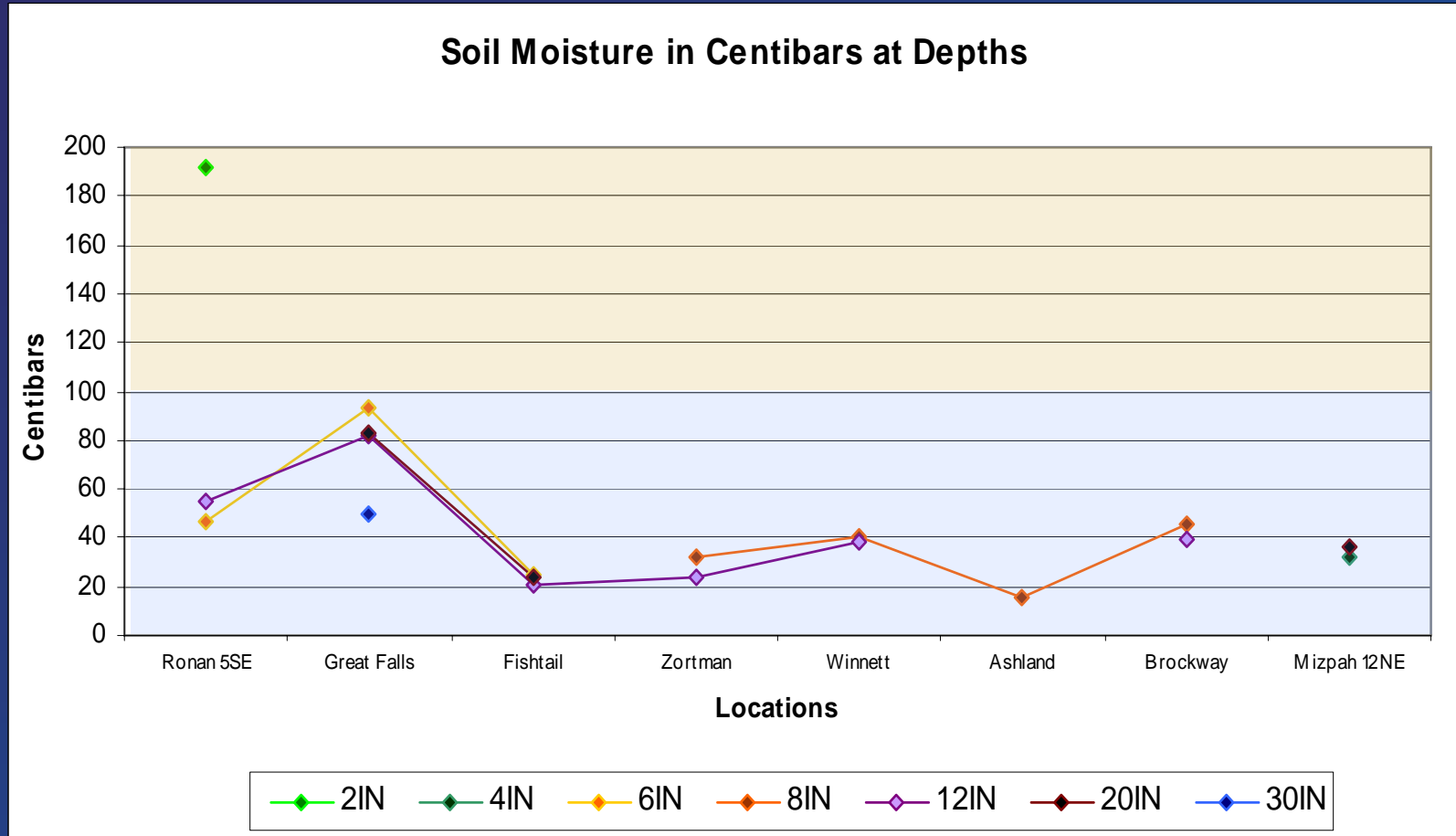
Expanding Soil Moisture Network

Volumetric Soil Moisture in Percent at Depths

Field capacity of silt loam and clay loam soils is 35 percent of volumetric soil moisture. The plant available water of these soils is available to plants at values between 13 and 40 percent.



Expanding Soil Moisture Network



Conversion of centibars to available water in loam and clay/loam soils...

10cb or less...More than 95 percent plant available water

10-30cb.....75 - 95 percent plant available water

30-50cb.....55 - 75 percent plant available water

50-70cb.....45 - 55 percent plant available water

80-85cb.....38 - 40 percent plant available water

85cb or more...No available water

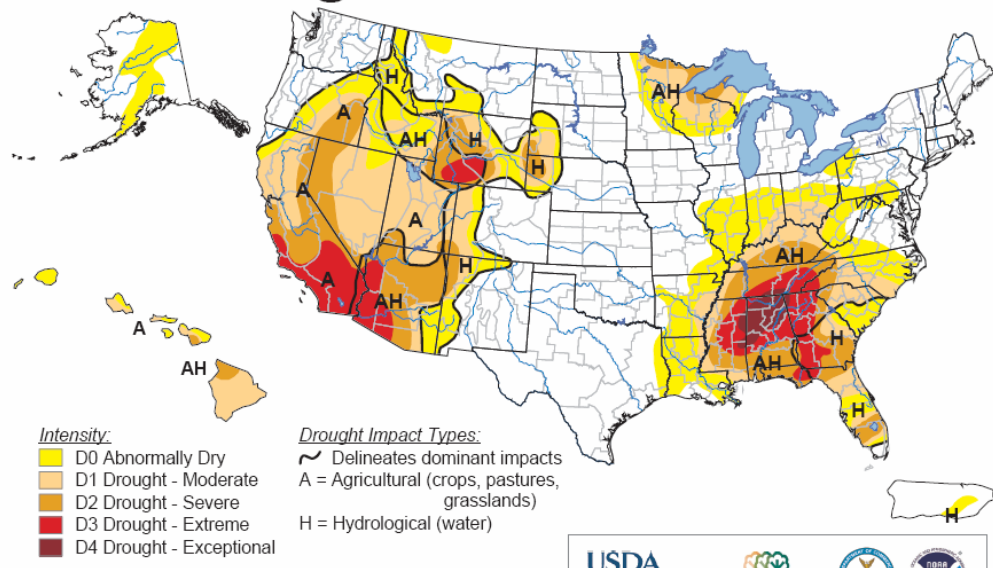
National Drought Monitor

Issued June 14, 2007

U.S. Drought Monitor

June 12, 2007

Valid 8 a.m. EDT



The Drought Monitor
Local conditions may
for forecast statement
<http://drought>

💧 Drought expansion

– Northwest... Rocky Mountain Front and Central

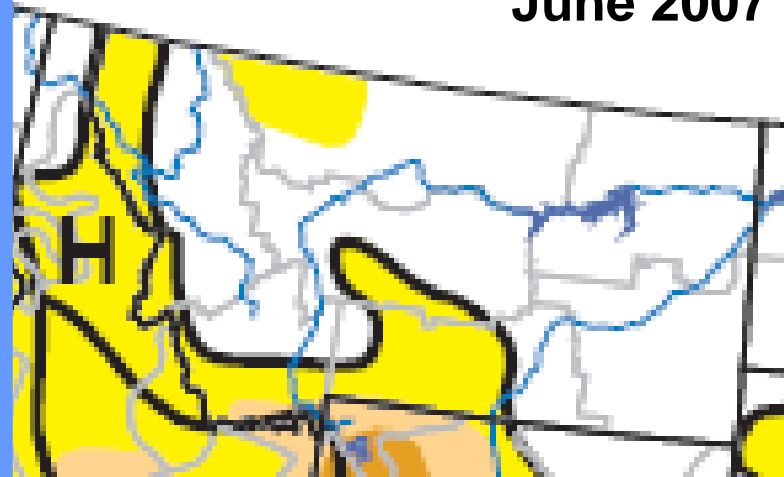
- Increase from no drought to 'Abnormally Dry' (D0)

💧 Drought decrease

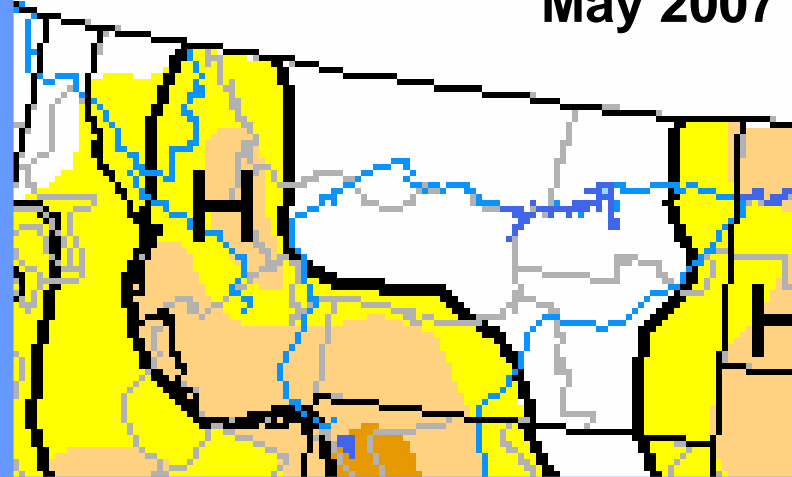
– West... southwest... south central and east

- Removal of 'Moderate Drought' (D1) and 'Abnormally Dry' (D0)

June 2007

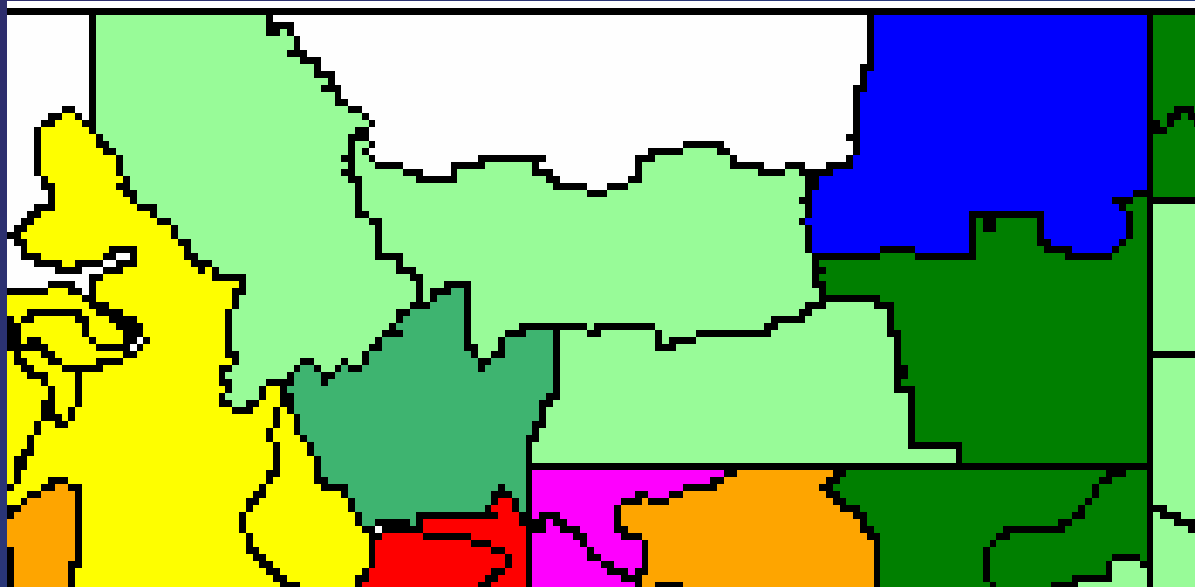


May 2007

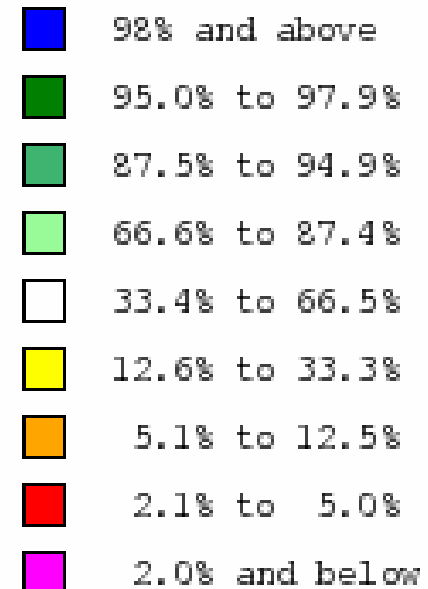


1-Month Precipitation Percentile

May 2007

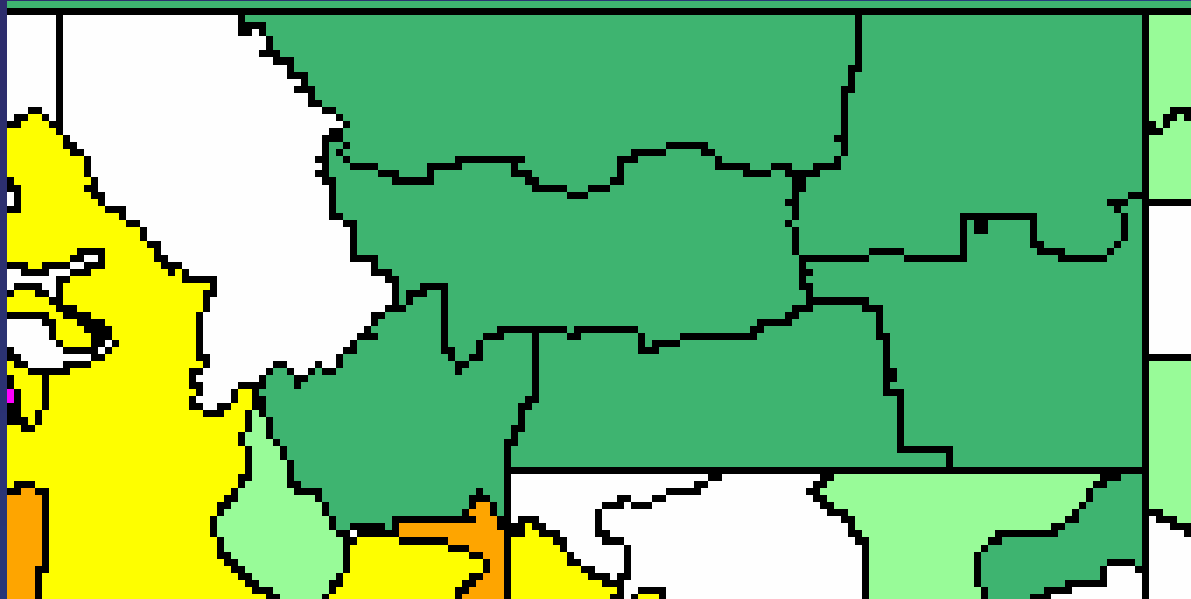


• Represents the likelihood that a precipitation value as high as that observed over the number of months indicated would not be exceeded.

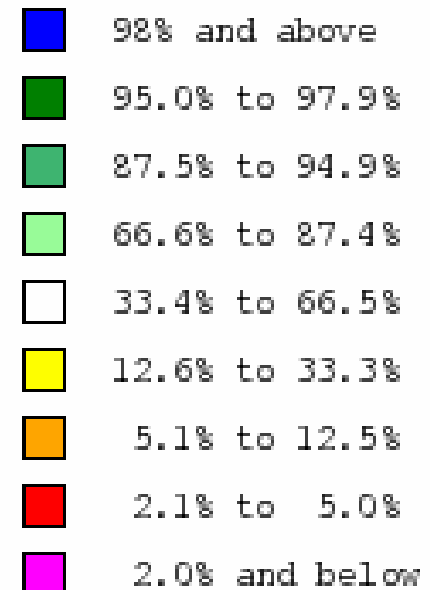


8-Month Precipitation Percentile

Through the end of May 2007

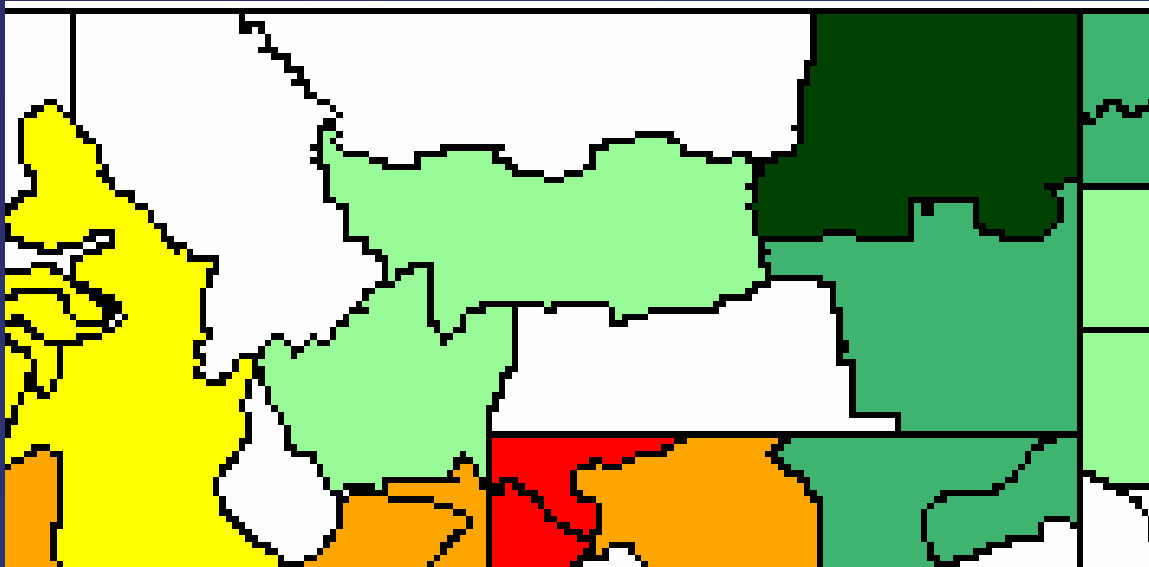


💧 **October 2006 – May 2007**

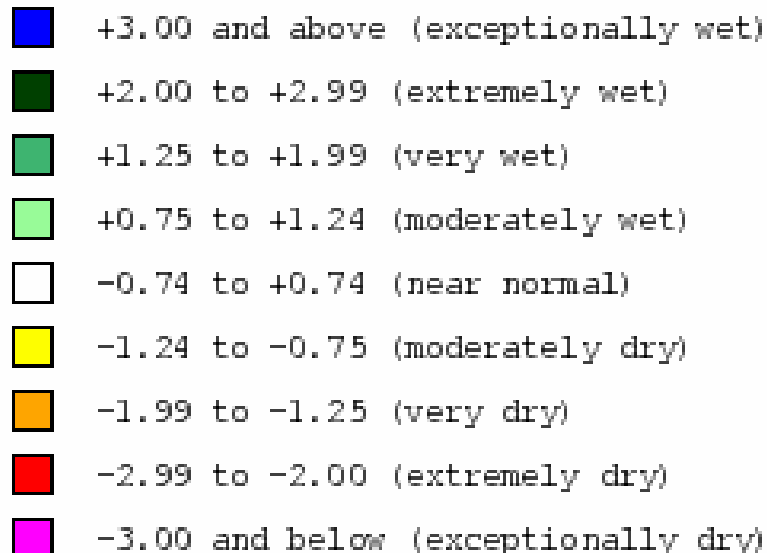


1-Month Standardize Precipitation Index

May 2007

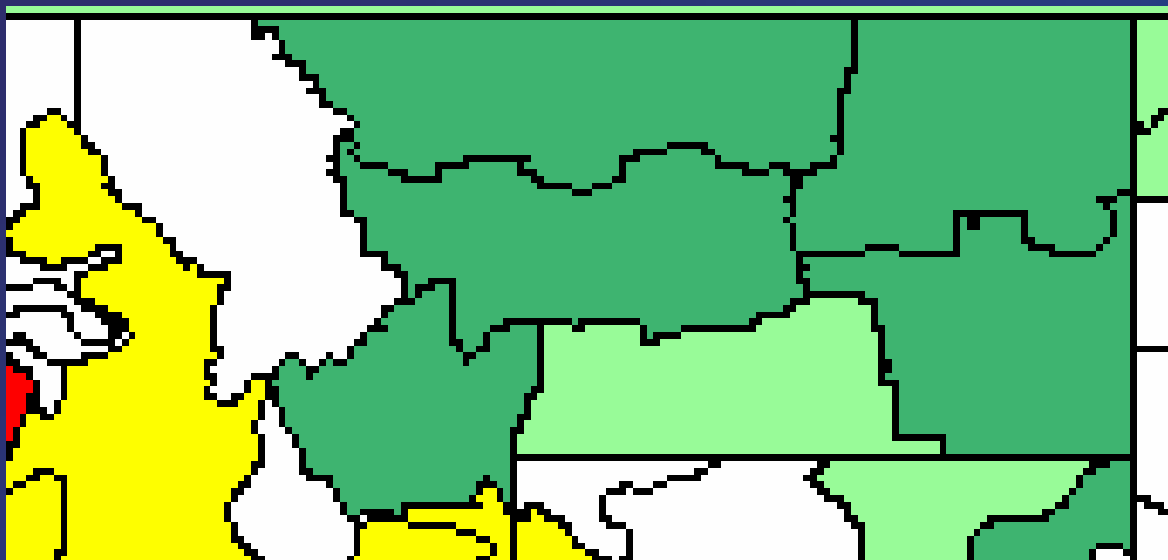


- One climate divisions
'Extremely wet'!
- One climate division
'Very wet'
- Two climate divisions
'Moderately wet'
- Three climate divisions
'Near normal'

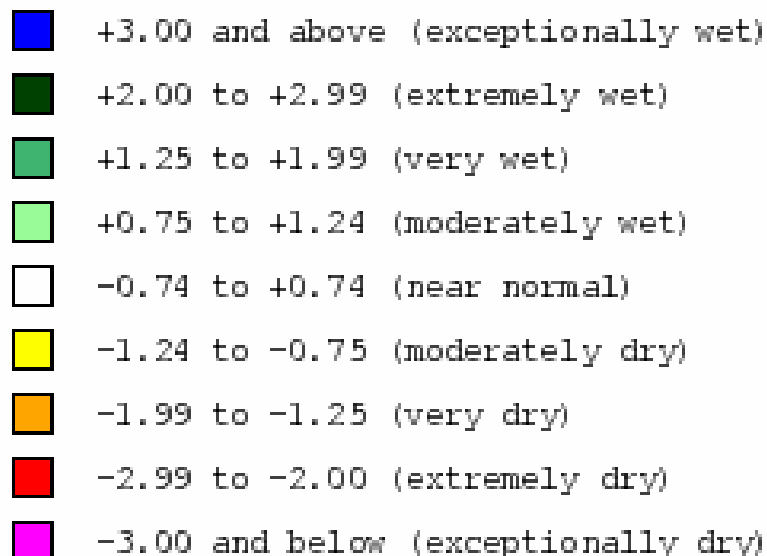


8-Month Standardize Precipitation Index

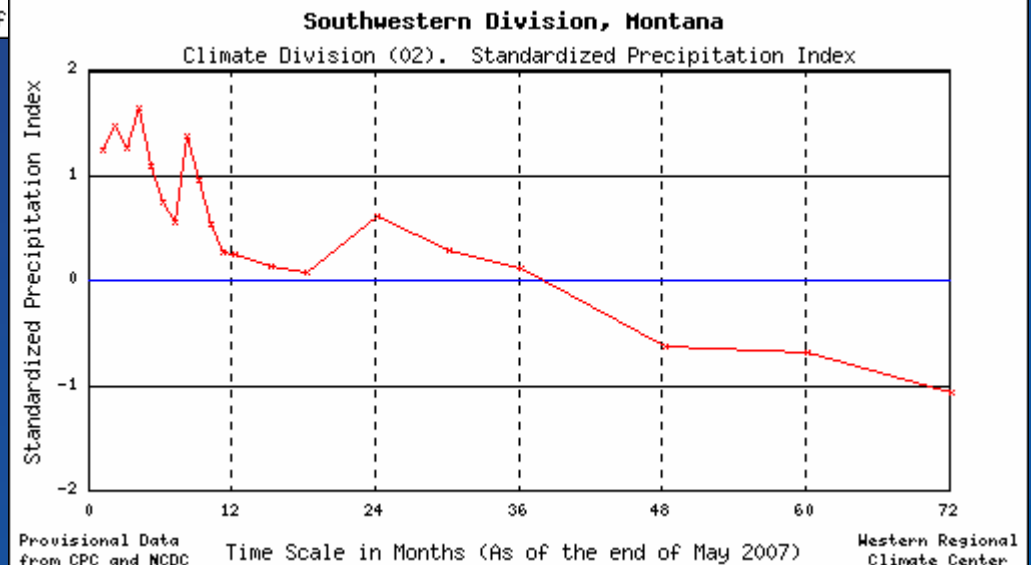
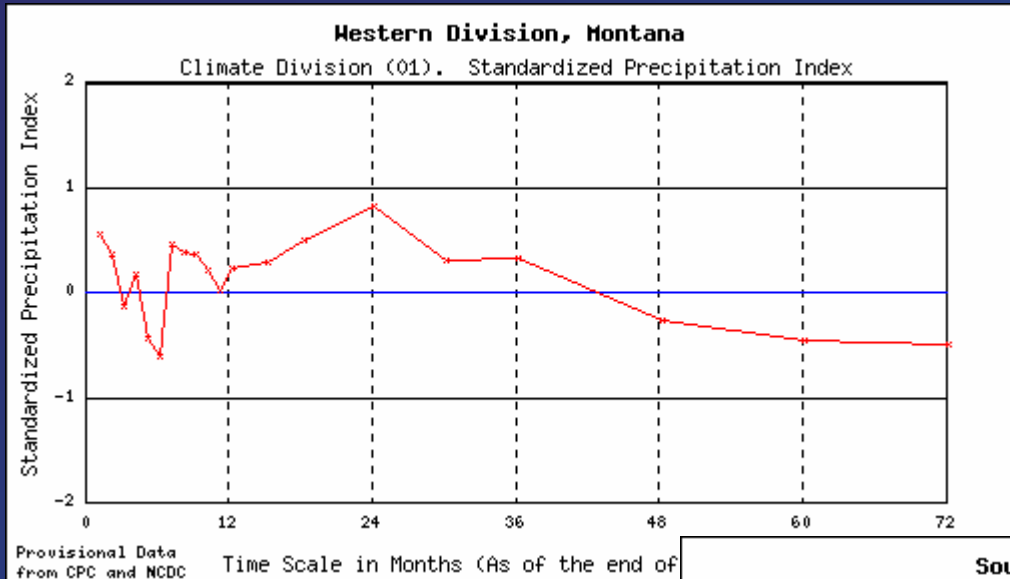
October 2006 - May 2007



- Five climate divisions 'Very wet'!
- One climate division 'Moderately wet'
- One division 'Near normal'



Standardize Precipitation Index West and Southwest

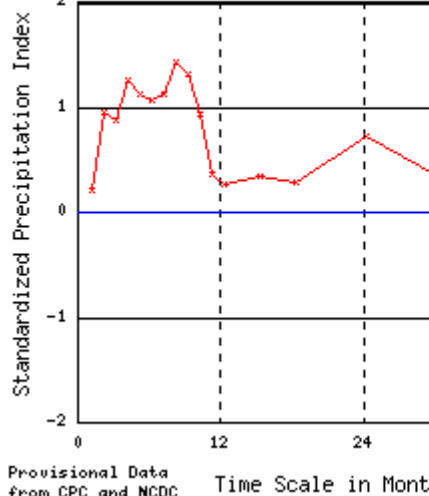


Standardize Precipitation Index

North central... Central and South central

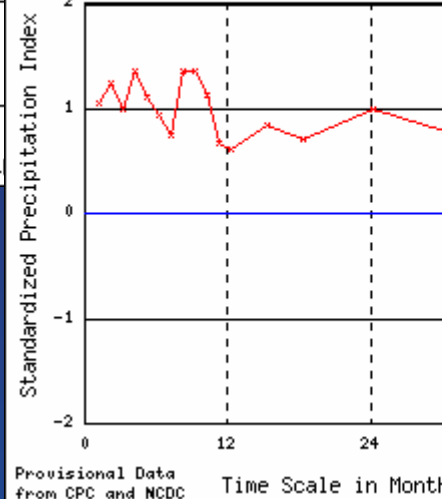
North Central Division, Montana

Climate Division (03). Standardized Precipitation Index



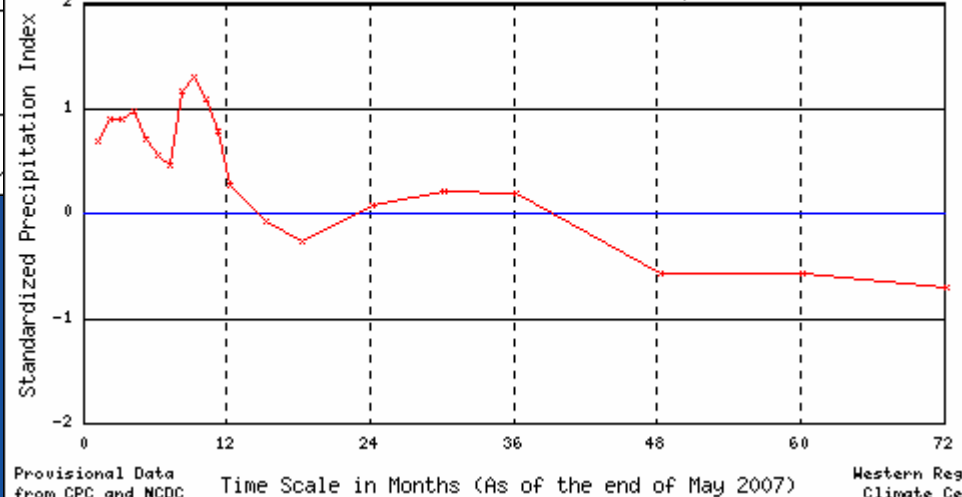
Central Division, Montana

Climate Division (04). Standardized Precipitation Index



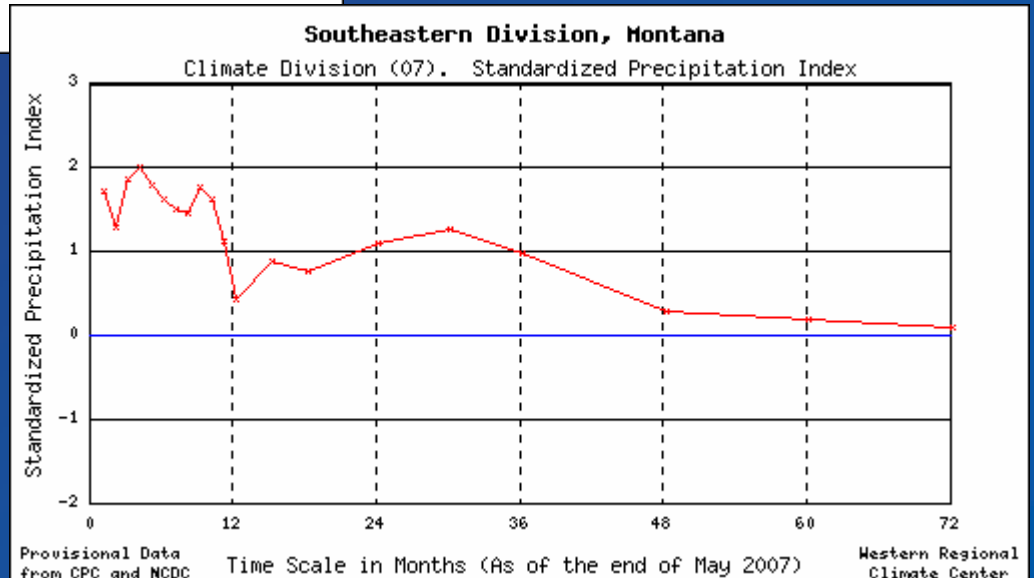
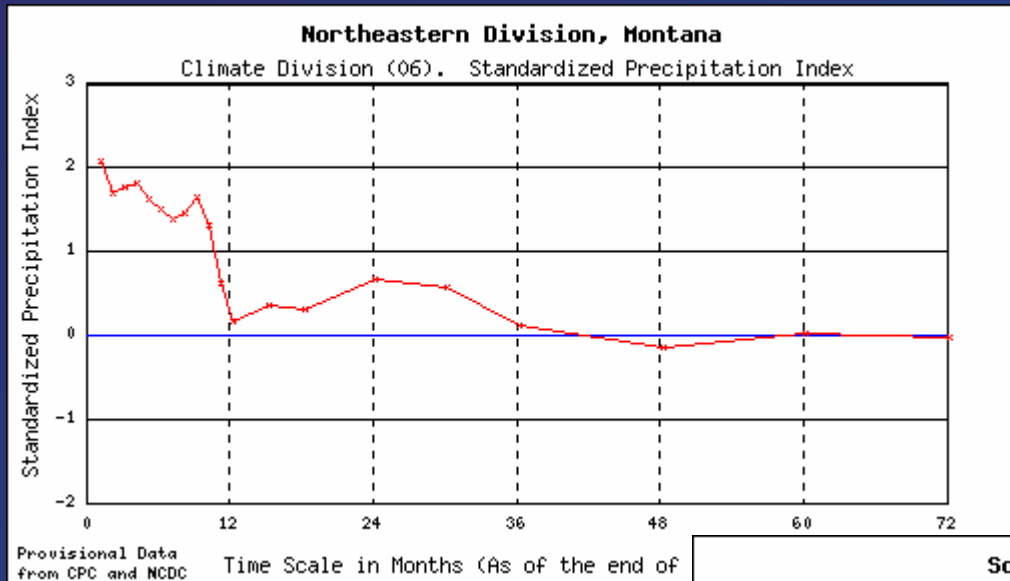
South Central Division, Montana

Climate Division (05). Standardized Precipitation Index



Standardize Precipitation Index

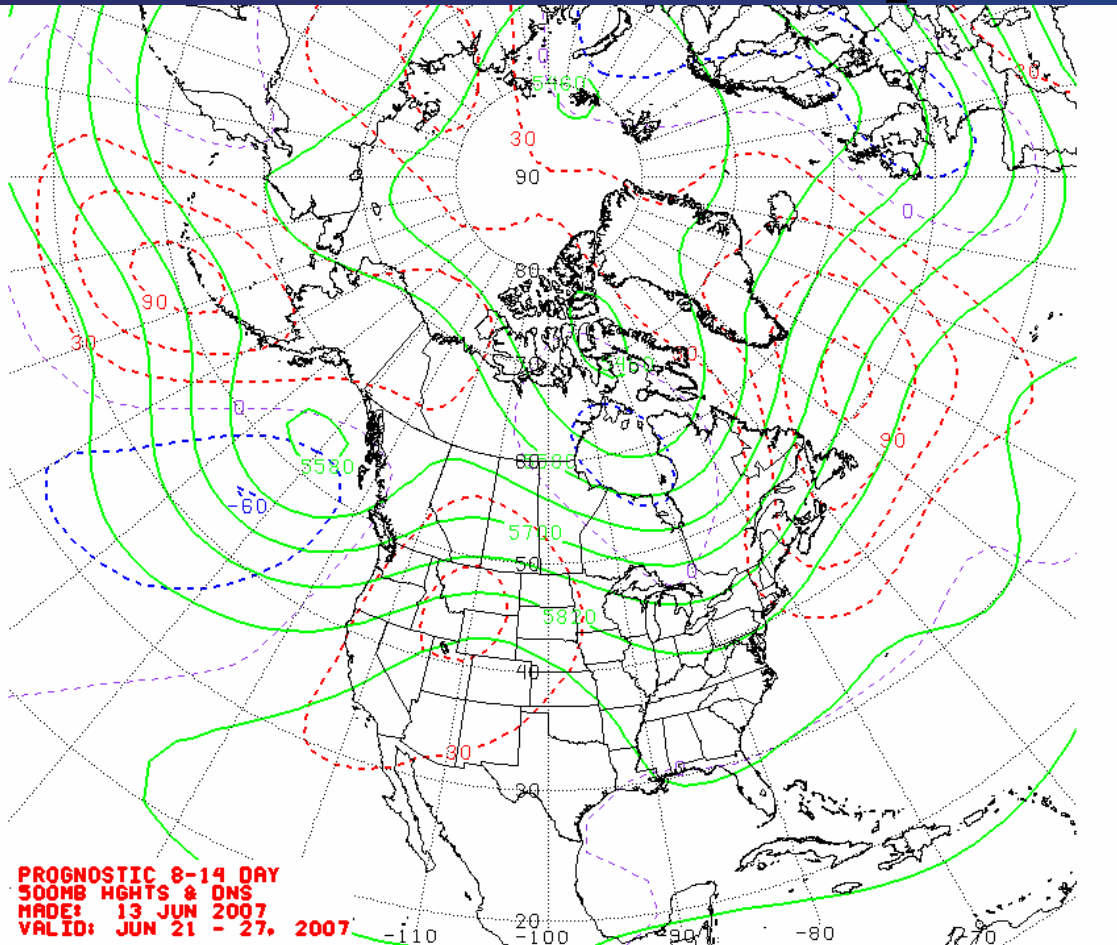
Northeast and Southeast



8 – 14 Day Forecast

500 mb pattern

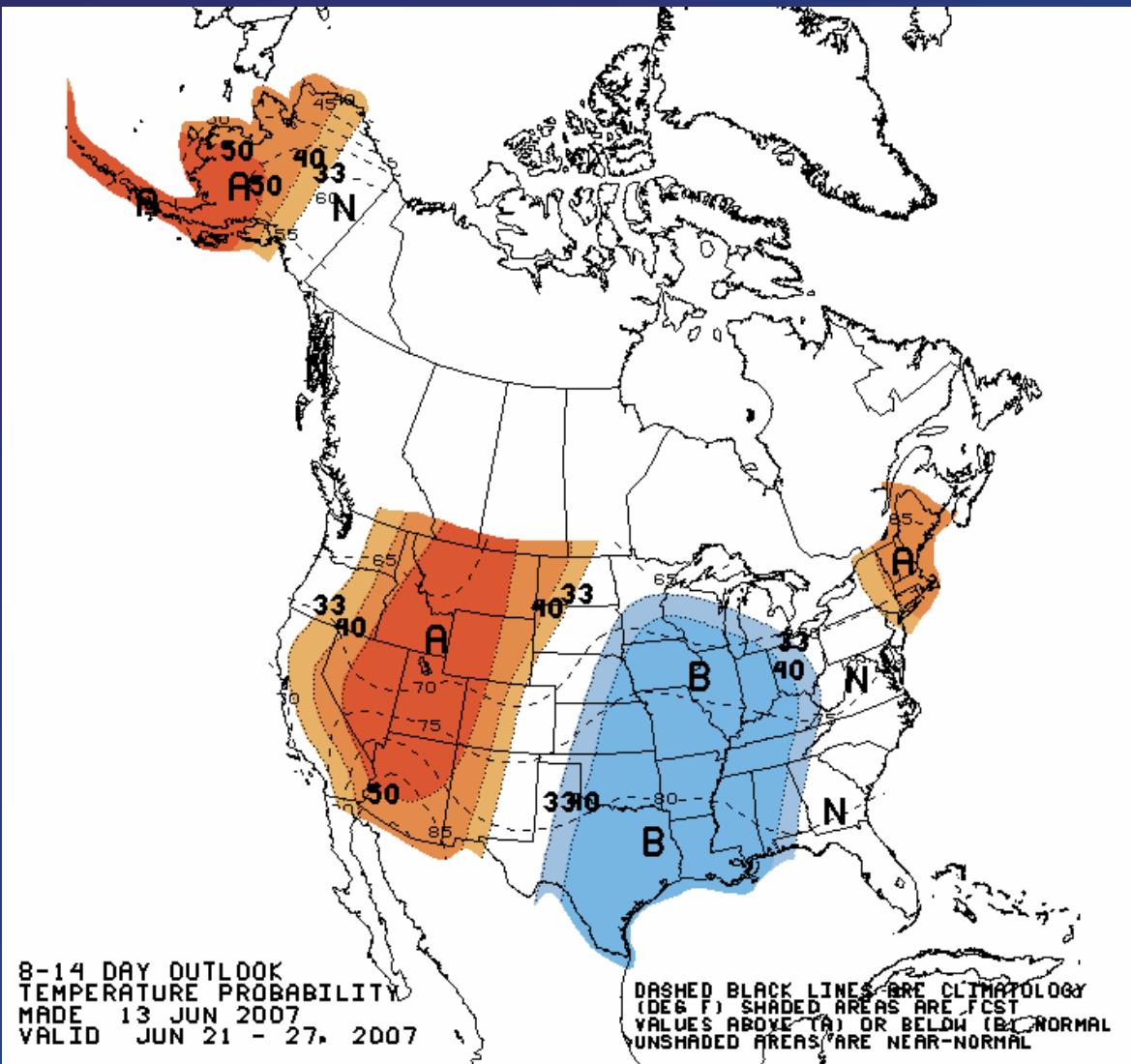
- June 21 – 27
- High pressure ridge cover much of western U.S. including Montana



8 – 14 Day Forecast

Temperature Outlook

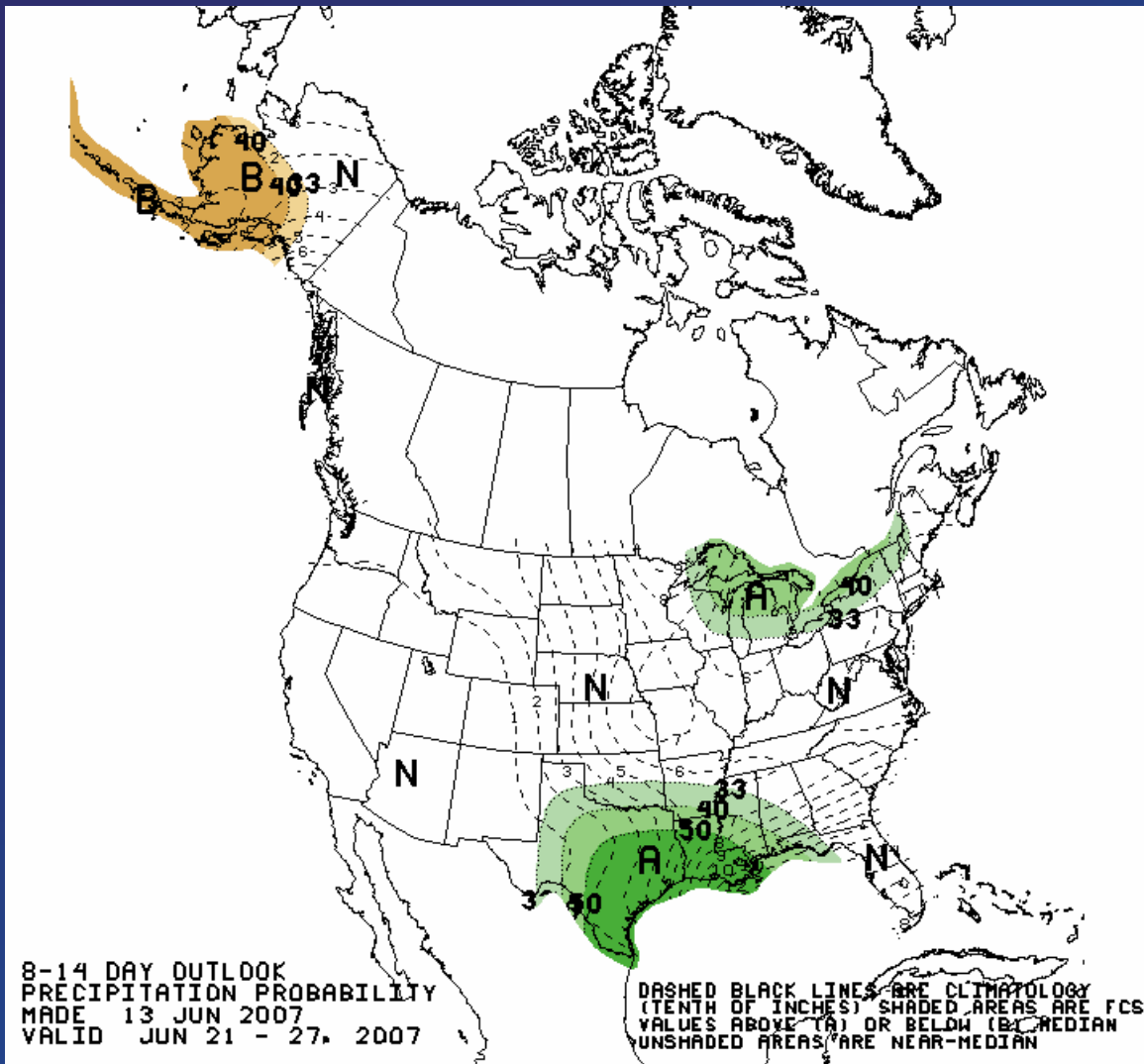
- June 21 – 27
- 50% - 60% chance of above normal temperatures across Montana
 - *Highs – 70s*
 - *Lows – 40s*



8 – 14 Day Forecast

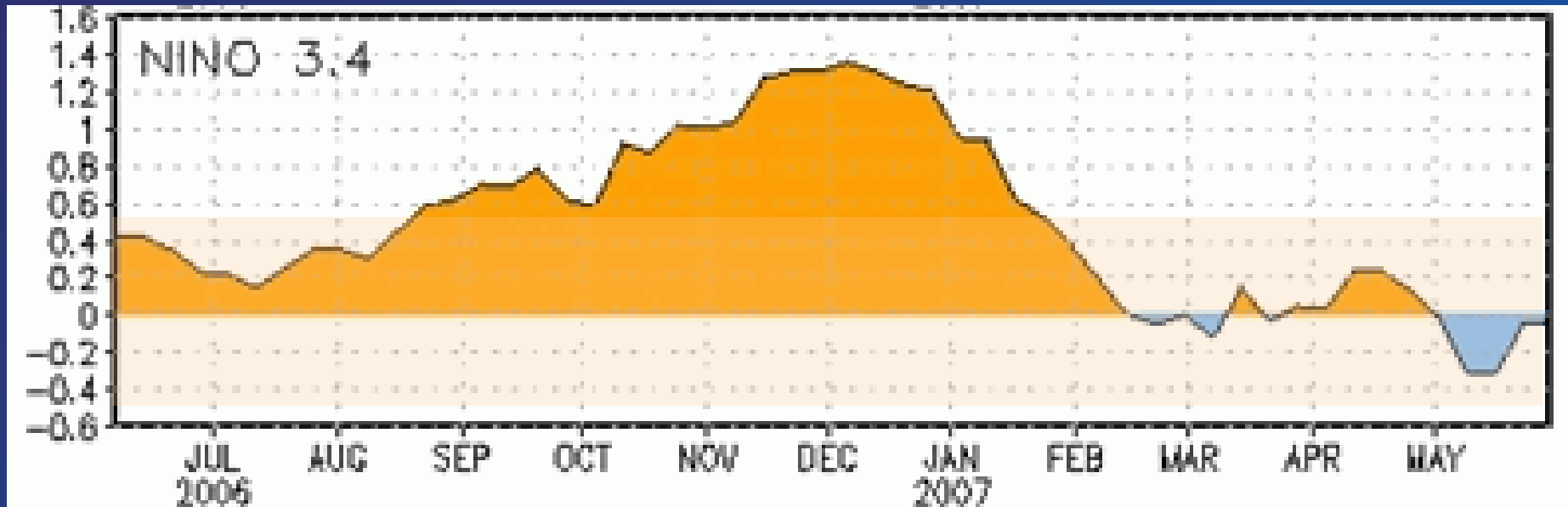
Precipitation Outlook

- June 21 – 27
- Equal chances for above... below or near normal precipitation
 - 1.75 – 2.75 inches



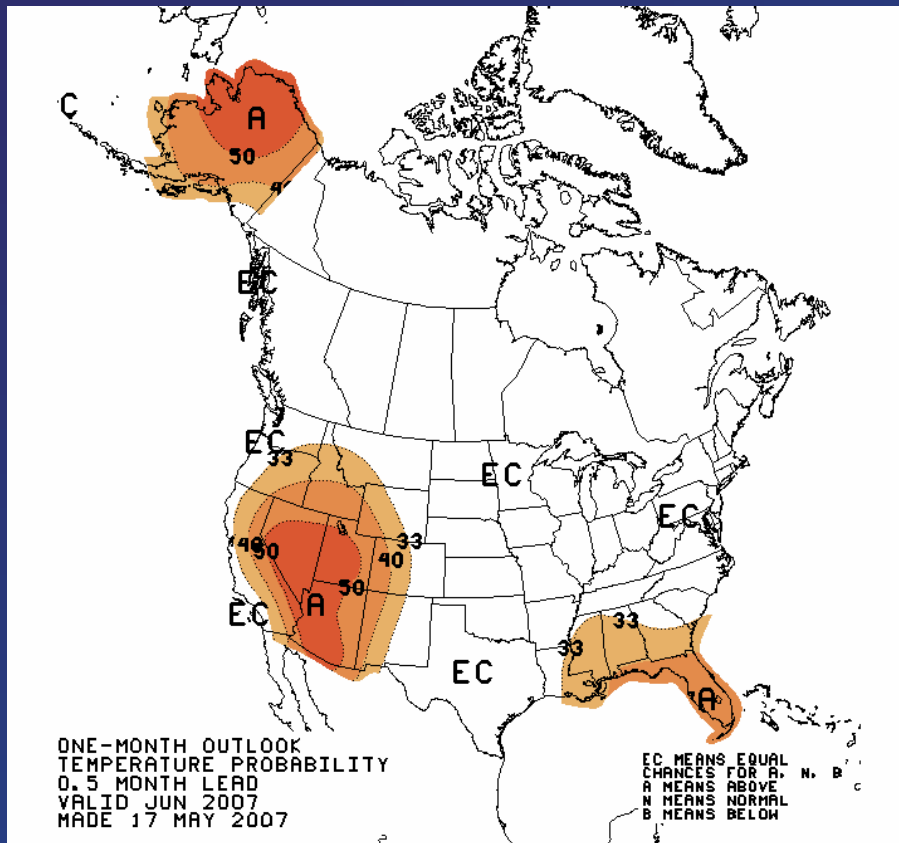
El Niño / La Niña

- El Niño / La Niña conditions currently in neutral phase
- Transition from neutral to La Niña conditions (below normal sea surface temperatures) possible during next 1-3 months



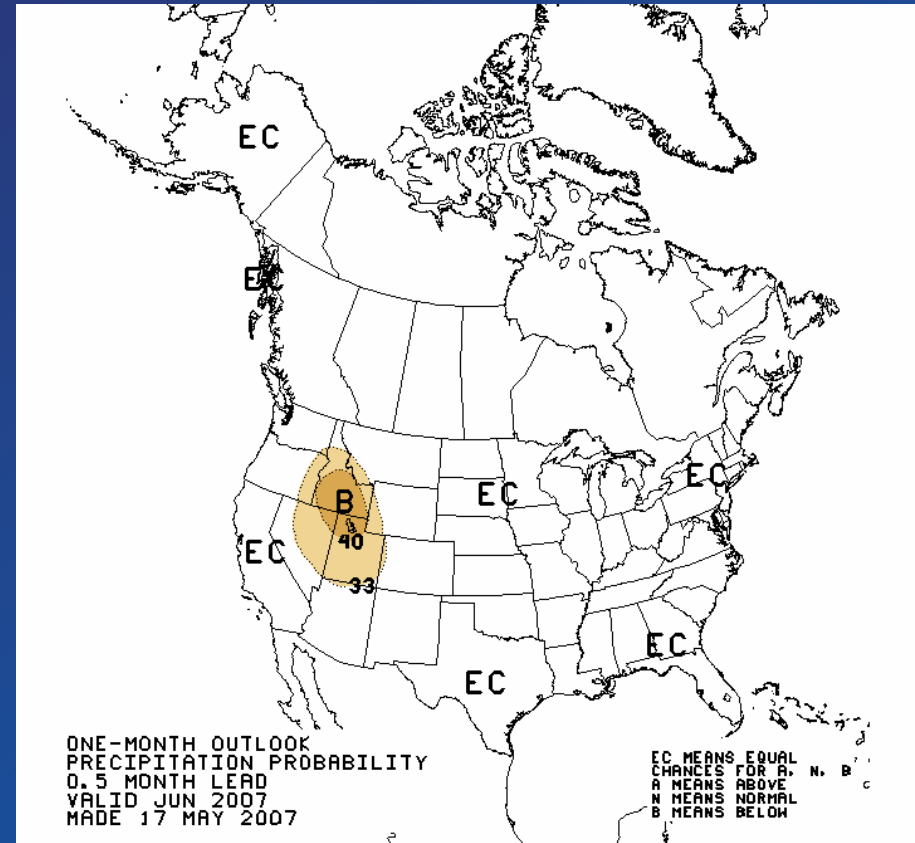
June Outlook

Temperature



- 33% to 40% chance temperatures will be above normal across southwest Montana

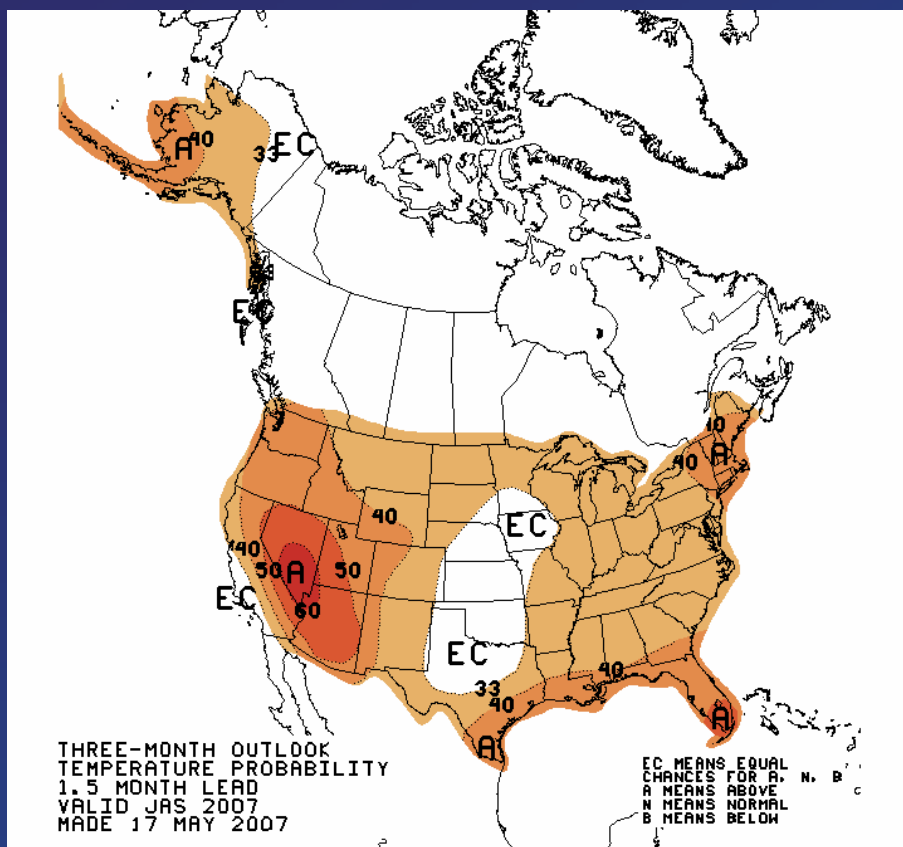
Precipitation



- 33% to 40% chance precipitation will be below normal across extreme southwest Montana

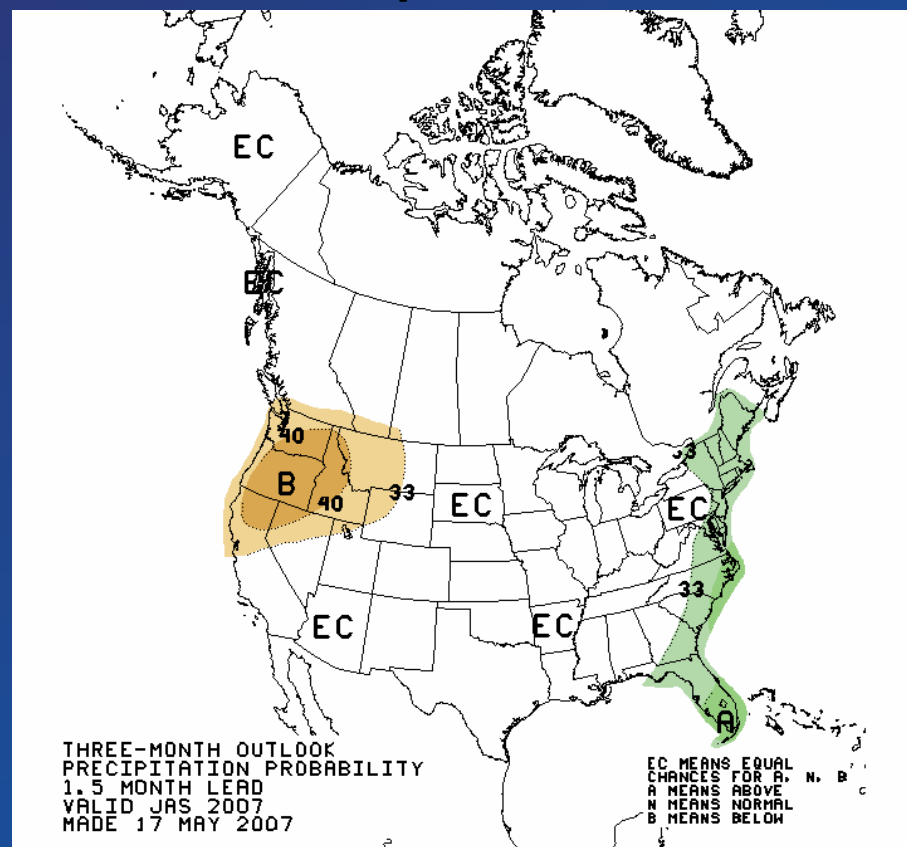
July - September Outlook

Temperature



- 33% to 40% chance temperatures will be above normal across all of Montana

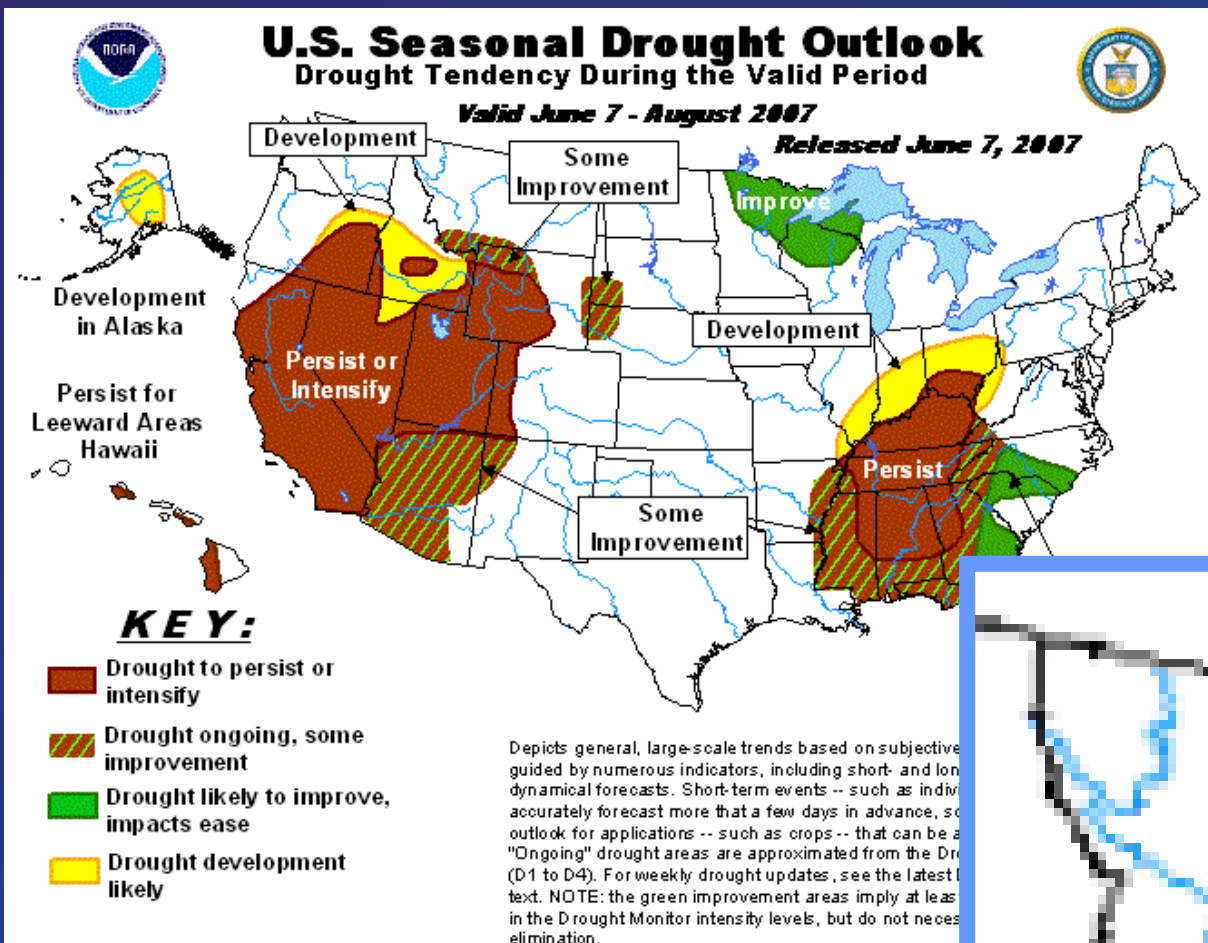
Precipitation



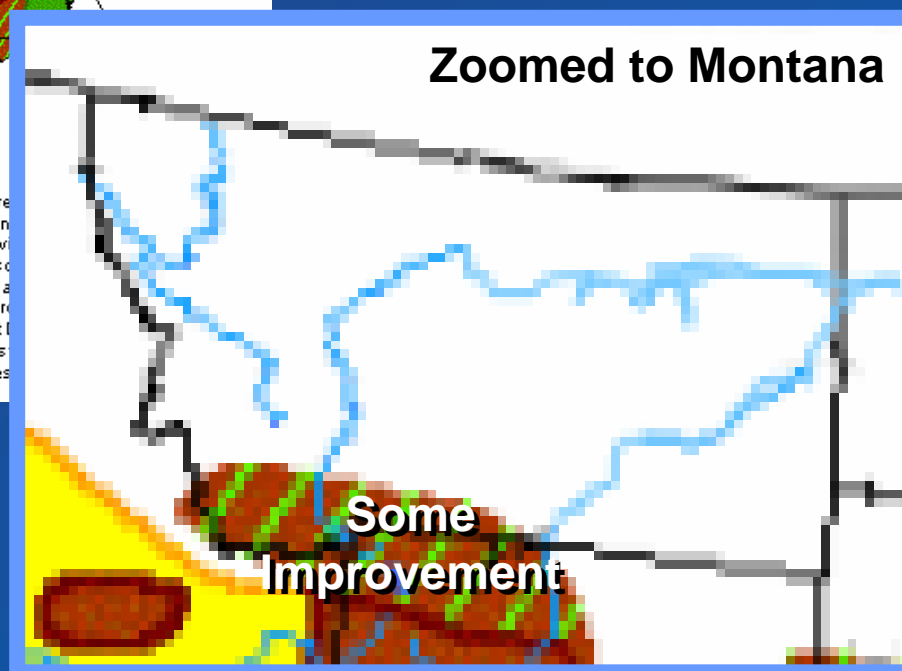
- 33% to 40% chance precipitation will be below normal over west and central Montana

Drought Outlook through June

Issued June 7, 2007



💧 Areas in drought status expected to see drought some improvement



To sum up...

- 💧 Much of Montana has seen well above normal during the May – June period
 - *Large areas have received more than 200% of normal*
- 💧 Water year precipitation at least near normal for virtually all of Montana
 - *Significant improvements made over eastern Montana*
- 💧 July – September outlook showing better chances for below normal precipitation for west and central Montana

weather.gov

weather.gov/billings

weather.gov/glasgow

weather.gov/missoula

weather.gov/greatfalls